

Application No. 10/631,944
Amend. dated July 7, 2006
Reply to Office Action of April 7, 2006

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1. (currently amended) An isolated weapon simulator having a bolt providing recoil for a user, said weapon simulator comprising:

a housing including a piston chamber and a piston positioned in said chamber, said piston connected to the bolt;

a regulated gas supply detachably attached to said housing;

a valve chamber in said housing, said valve chamber connected with said regulated gas supply and the bolt;

a recoil valve positioned in said valve chamber, said recoil valve including a first gate, a second gate, and a third gate with a distal valve cavity defined between said first gate and said second gate and a central valve cavity is defined between said second gate and said third gate, said recoil valve positioned to control the release of gas from said regulated gas supply to said piston chamber;

a pilot valve connected to said regulated gas supply; and

a pilot channel connecting said pilot valve to said valve chamber, wherein said pilot valve transmits gas to said distal end of said recoil valve from said gas supply to shift said recoil valve in said valve chamber.

Claim 2. (original) The weapon simulator as described in claim 1 further comprising:

a recoil cylinder port connecting said piston chamber with said valve chamber;

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wherein said recoil valve controls the release of gas through said recoil cylinder port into said piston chamber to move said piston.

Claim 3. (original) The weapon simulator as described in claim 1 further comprising:

a spring positioned in said valve chamber;

wherein said recoil valve includes a proximal end and a distal end; and

wherein said spring applies a force to said proximal end of said recoil valve in said valve chamber.

Claims 4-6. (cancelled)

Claim 7. (original) The weapon simulator as described in claim 1 [[6]] further comprising:

a gas supply channel through said housing connecting said gas supply with said valve chamber;

wherein said pilot valve conveys gas to said distal end of said recoil valve to displace said recoil valve in said valve chamber;

wherein said central valve cavity is in communication with said gas supply channel and said recoil cylinder port to allow gas to engage said piston in said piston chamber.

Claim 8. (original) The weapon simulator as described in claim 1 further comprising an exhaust port traversing said housing from said valve chamber.

Claims 9-13. (cancelled)

Claim 14. (previously presented) A method for generating recoil in a weapon simulator having a bolt slidably attached to a firearm housing comprising the steps of:

- a) providing a piston slidably mounted in a piston chamber in the firearm housing;

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- b) attaching a regulated gas supply to the firearm housing, said gas supply distributing compressed gas;
- c) providing a recoil valve in a valve chamber having a distal end and a proximal end, said distal end of said valve chamber connected to a pilot valve and said proximal end of said valve chamber connected to said gas supply;
- d) conveying gas using said pilot valve to said distal end of said valve chamber;
- e) displacing said recoil valve in said valve chamber; and
- f) forcing gas from said gas supply through said recoil valve into said piston chamber to generate recoil.

Claim 15. (previously presented) The method as described in claim 14 wherein step c) further comprises the step of:

biasing said proximal end of said recoil valve in said valve chamber with a spring.

Claim 16. (previously presented) The method as described in claim 15 wherein step e) further comprises the step of:

forcing gas from said gas supply into a central valve cavity of said recoil valve; and dispersing said gas from said central valve cavity into a recoil cylinder port connected with said distal end of said valve chamber to overcome the biasing force of said spring.

Claim 17. (previously presented) An independent weapon simulator generating recoil movement when fired by displacement of a slide assembly, said weapon simulator comprising:

a housing defining a piston chamber housing a piston, said piston connected to the slide assembly;

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a gas supply to forcefully displace said slide assembly, said gas supply connected to said housing; and

a valve chamber in said housing connected between said gas supply and said slide assembly;

a recoil valve positioned in said valve chamber to control the release of gas from said gas supply to said piston chamber, wherein said recoil valve includes

a first gate, a second gate, and a third gate;

a central valve cavity between said at least two valve gates,

a distal valve cavity defined between said first gate and said second gate;

wherein said central valve cavity is defined between said second gate and said third gate; and

an electrically-controlled valve connected between said recoil valve and said gas supply, wherein said electrically-controlled valve conveys gas to said recoil valve to displace said recoil valve in said valve chamber.

Claims 18-19. (cancelled)

Claim 20. (previously presented) The weapon simulator as described in claim 17, wherein said electrically controlled valve is a pilot valve.

Claim 21. (currently amended) A method for generating recoil in a weapon simulator having a slide attached to a firearm shell, the shell housing a piston positioned in a piston chamber, said method comprising the steps of:

- a) activating a pilot valve in the shell;

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- b) conveying gas from a gas supply through said pilot valve to a valve chamber housing a recoil valve having a first gate, a second gate, and a third gate;
- c) shifting said recoil valve in said valve chamber with the gas; and
- d) displacing the piston in the piston chamber using gas forced into the piston chamber from said gas supply through said recoil valve to generate recoil.

Claim 22. (previously presented) The method as described in claim 21, wherein prior to step a), including the step of attaching a gas supply magazine to the shell.